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APPENDIX A

SAUNDERS TEXT AND REVIEW SERIES

CELLULAR AND MOLECULAR IMMUNOLOGY

THIRD EDITION

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APPENDIX: PRINCIPAL FEATURES OF KNOWN CD MOLECULES (Continued)

| CD Designation | Common Synonym(s) | Molecular Structure | Main Cellular Expression | Known or Proposed Function(s) |
|----------------|--|---|---|--|
| CDw17 | — | Carbohydrate epitope (lactosylceramide) | Granulocytes, macrophages, platelets | ? |
| CD18 | β chain of LFA-1 family ($\beta 2$ integrins) | 95 kD; non-covalently linked to CD11a, CD11b, or CD11c | Leukocytes | See CD11a, CD11b, CD11c |
| CD19 | B4 | 90 kD | Most B cells | Role in B cell activation |
| CD20 | B1 | Heterodimer: 35 and 37 kD chains | Most or all B cells | ? Role in B cell activation or regulation; calcium ion channel |
| CD21 | CR2; C3d receptor; B2 | 145 kD | Mature B cells | Role in B cell activation; receptor for C3d, Epstein-Barr virus |
| CD22 | — | 135 kD | B cells | Role in B cell activation |
| CD23 | Fc ϵ RIIb | 45–50 kD | Activated B cells, macrophages | Low-affinity Fc ϵ receptor, induced by IL-4; function unknown |
| CD24 | Heat-stable antigen | Heterodimer of 38 and 41 kD chains; RFLinked | B cells, granulocytes | ? Role in costimulation of T cells |
| CD25 | IL-2 receptor α chain; TAC; p55 | 55 kD | Activated T and B cells; activated macrophages | Complexes with IL-2R β and γ high-affinity IL-2 receptor; T cell growth |
| CD26 | — | 110 kD | Activated T and B cells, macrophages | Serine peptidase |
| CD27 | — | Homodimer of 55 kD chains | Most T cells; ? some plasma cells | ? Costimulation of T cells; member of TNF-R, Fas, CD40 family |
| CD28 | Tp44 | Homodimer of 44 kD chains | T cells (most CD4 ⁺ , some CD8 ⁺ cells) | T cell receptor for costimulator molecule(s) B7-1, B7-2 |
| CD29 | β chain of VLA antigens (β , integrins) | 130 kD; non-covalently associated with VLA α chains (CD49) | Broad | Adhesion to extracellular matrix proteins, cell-cell adhesion (see CD49) |
| CD30 | Ki-1 | 105 kD | Activated T and B cells, Reed-Sternberg cells in Hodgkin's disease | ? Role in activation-induced cell death; member of TNF-R family |
| CD31 | PECAM-1; platelet gpIIb | 140 kD | Platelets; monocytes, granulocytes, B cells, endothelial cells, T cells | Role in leukocyte-endothelial adhesion |
| CD32 | Fc γ RII | ~ 40 kD | Macrophages, granulocytes, B cells, eosinophils | Fc receptor for aggregated IgG; role in phagocytosis, ADCC, feedback inhibition of B cells |
| CD33 | — | 67 kD | Monocytes, myeloid progenitor cells | ? |
| CD34 | — | 90 kD | Precursors of hematopoietic cells; vascular endothelium | Ligand for L-selectin |

Table continued on following page

APPENDIX: PRINCIPAL FEATURES OF KNOWN CD MOLECULES *(Continued)*

| CD Designation | Common Synonym(s) | Molecular Structure | Main Cellular Expression | Known or Proposed Function(s) |
|----------------|---|---|---|---|
| CD35 | CR1; C3b receptor | Polymorphic; four forms are 190–280 kD | Granulocytes, monocytes, erythrocytes, B cells | Binding and phagocytosis of C3b-coated particles and immune complexes |
| CD36 | Platelet gpIIb | 90 kD | Monocytes, platelets | ? Platelet adhesion |
| CD37 | — | Composed of two or three 40–52 kD chains | B cells, some T cells | ? |
| CD38 | T10 | 45 kD | Plasma cells, thymocytes, activated T cells | ? |
| CD39 | — | 78 kD | Activated B cells, NK cells, some T cells | ? |
| CD40 | — | Heterodimer of 44 and 48 kD chains | B cells, macrophages, dendritic cells, endothelial cells, epithelial cells | Role in B cell and macrophage activation induced by T cell contact; receptor for T cell CD40 ligand; member of Fas/TNF-R family |
| CD41 | gpIIb component of gpIIb/IIIa complex (gpIIa is CD61) | Complex of gpIIb heterodimer (120 and 23 kD) and gpIIa (CD 61) (integrin) | Platelets | Platelet aggregation and activation: receptor for fibrinogen, fibronectin (binds to R-G-D sequence) |
| CD42a | Platelet gpIX | 23 kD; forms complex with CD42b | Platelets, megakaryocytes | Platelet adhesion, binding to von Willebrand's factor |
| CD42b | Platelet gpIb | Dimer of 135 and 25 kD chains, forms complex with CD42a | See CD42a | See CD42a |
| CD43 | Sialophorin | 115 kD, highly sialylated | Leukocytes (except circulating B cells) | ? Role in T cell activation |
| CD44 | Pgp-1; Hermes | 80–> 100 kD, highly glycosylated | Leukocytes, erythrocytes | May function as homing receptor; receptor for matrix components (e.g., hyaluronate) |
| CD45 | T200; leukocyte common antigen | Multiple isoforms, 180–220 kD | Leukocytes | Role in signal transduction (tyrosine phosphatase) |
| CD45R | Forms of CD45 with restricted cellular expression | CD45RO: 180 kD CD45RA: 220 kD CD45RB: 190, 205, and 220 kD isoforms | CD45RO: memory T cells CD45RA: naive T cells CD45RB: B cells, subset of T cells | See CD45 |
| CD46 | Membrane cofactor protein (MCP) | 45–70 kD | Leukocytes; epithelial cells, fibroblasts | Regulation of complement activation; binds C3b and C4b |
| CD47 | — | 47–52 kD | Broad | Mediates neutrophil migration across epithelium |
| CD48 | BLAST-1 | 41 kD; PI-linked | Leukocytes | ? |
| CD49a | VLA α_1 chain | 210 kD; associates with CD29 to form VLA-1 (β_1 integrin) | Activated T cells, monocytes; other connective tissue cells | Adhesion to collagen, laminin |
| CD49b | VLA α_2 chain; platelet gpla | 170 kD; associates with CD29 to form VLA-2 (β_1 integrin) | Platelets, activated T cells, monocytes, some B cells | Adhesion to extracellular matrix; receptor for collagen |